



## CITY OF DURHAM | NORTH CAROLINA

**Date:** March 17, 2015  
**To:** Thomas J. Bonfield, City Manager  
**Through:** W. Bowman Ferguson, Deputy City Manager  
**From:** Donald F. Greeley, Director, Water Management  
**Subject:** Establishment of Service Area and Service Area Fee for the Southeast Regional Lift Station

### Executive Summary

The Department of Water Management (DWM) proposes the construction of a regional sewer lift station in the southeastern portion of the City's water and sewer service area, between NC Highway 98 and US Highway 70. Construction of this lift station will allow for the extension of sewer services to support new development activity in eastern Durham County, which would ultimately be voluntarily annexed into the City. A portion of the service area extends into Wake County per an existing interlocal agreement. The proposed Southeast Service Area is shown in Figure 1 (attached). In addition to providing the extension of sewer services, the new lift station will also allow the City to abandon two existing lift stations, replacing them with a gravity main outfall.

There is significant development interest in the Southeast (SE) Service Area. Current City policy requires that developers build any required lift stations, and then donate them to the City. With a large number of separate developments planned or underway in the proposed Southeast Service Area, following the current approach will result in a system of many small lift stations creating a significant maintenance burden for the City. The most cost effective/efficient alternative is for the City to construct a single, regional lift station and avoid the anticipated cost of maintaining many separate and smaller lift stations. The SE Regional lift station will pump sewage to the North Durham Water Reclamation Facility (NDWRF) which has capacity to accept and treat the anticipated volume.

The estimated cost to plan, design, permit, and construct a regional lift station, force main, and gravity outfall is approximately \$35 million. It is proposed that the costs of this project be funded initially by the City, and recovered through a new service area fee to be imposed on the proposed new development served by City sewer in the Southeast Service Area.

### Recommendations

The Department of Water Management recommends that the City Council:

1. Approve the establishment of the proposed Southeast Service Area; and
2. Approve an ordinance setting a service area fee for new development in the Southeast Service Area

### Background

Developments in eastern Durham County have been proposed as early as 2000, but have been limited in size and scope due to limited water and sewer service in the area. The extension of utilities to accommodate the Del-Webb development has encouraged additional new development activity in the area. Multiple developers have expressed interest in developing large parcels in the Southeast Service Area, and some are currently in the City's development review process. The proposed Southeast Service Area is shown in Figure 1.

Generally, as development projects materialize, new lift stations are needed and constructed to ultimately pump sewage to existing infrastructure. Realizing this, a group associated with the Sierra development entered into an agreement with the City in the late 2000's to build a regional lift station at the intersection of Lick Creek and Olive Branch Road. The Sierra development never materialized primarily due to the 2008 recession; the development group dissolved, and the lift station was not constructed.

Recently, interest in this area has led the DWM to reconsider a regional lift station to minimize the need for several smaller lift stations designed to serve individual developments. This approach will allow the City to abandon the existing Brightleaf and Ravenstone lift stations, replacing them with a gravity outfall that will flow to the proposed regional lift station. Abandoning these existing stations for gravity outfalls and constructing a region lift station in lieu of small lift stations will significantly reduce the City's future maintenance costs.

The estimated capacity of the new regional station exceeds available capacity of existing sewer conveyance infrastructure. Therefore, sewage from the new station cannot be pumped to an existing collection or pumping system for subsequent conveyance to treatment at the NDWRF; the sewage must be pumped directly to the NDWRF. As such, a new force main from the regional lift station to the NDWRF is part of the proposed infrastructure. A preliminary estimate of the cost for the lift station, force main, and replacement outfall for the Brightleaf and Ravenstone lift stations is \$35,000,000. This cost includes development of a basin master plan, design, permitting, and construction. The additional flow to the NDWRF is accommodated by the 2014 Water Reclamation Facilities Improvements project.

DWM, Department of Public Works (DPW), and City-County Planning staffs estimate that roughly 14,000 new single family residential units can be developed within the next 40 years in the proposed Southeast Service Area.

### **Issues and Analysis**

So that the current sewer rate is not increased as a result of this project, 100% development participation is needed to finance the station, force main and outfall. A service area fee will be imposed on new development of parcels not currently within current corporate City limits, but which will ultimately be served by the proposed regional lift station.

The affected parcels are shown in tan in Figure 1. The Southeast Service Area is generally located south of NC Highway 98, east of Sherron Road and US Highway 70, north of the City's Service Boundary, and west of Coley Road.

It is proposed that the City initially fund the project and recover the costs, including debt, based on the number of single family residential units estimated to be developed over 20 years. In Year 1, the fee assessed for each unit proposed is \$4,260. Multi-family units and non-residential development will be assessed at \$11.84 per gallon of sewage generated on an average daily basis, as calculated per NCDENR's "2T Rules" for determining the minimum allowable design daily flow of wastewater facilities.

The proposed service area fees include an increase of 5% annually to recover the cost of debt and will be due from developers at the time of construction drawing permitting. Notification of the proposed service area fee has been provided pursuant to G.S 160A-4.1.

While extending the payback period to 25 or 30 years lowers the service area fee making this option more attractive to developers, the City's risk of not achieving full cost recovery is increased. The risk is associated with the uncertainty of achieving the anticipated build-out or development. Conversely, shortening the payback period decreases the City's risk but is less attractive to the development community due to the increased service area fees.

### **Alternatives**

Alternative 1 – Do not construct a regional lift station and require the individual developers to construct all infrastructure, offsite improvements and required upgrades. No overall development plan exists for this basin, and under this alternative the City will ultimately maintain and operate possibly a dozen or more new lift stations. Eventually, as these new lift stations reach the end of their useful life cycle, the City will bear the expense of abandoning or replacing them; replacing some with outfalls; and very likely constructing a new regional lift station and force main.

Further, Alternative 1 does not allow for the systematic planning of upgrades to existing infrastructure. Development interest and projects vary with respect to time and magnitude, and the vision of an ultimate build-out condition would remain in constant flux. At some point, with limited ability to plan, the receiving sewer capacity will be exceeded, and development in this area would need to be delayed until off-site infrastructure is upgraded. Also, without planning, a site that is ideal now for a regional lift station may not be available or constructible in the future.

Alternative 2: Construct regional lift station and assess a service area fee based on a 25 or 30-year recovery. The Year 1 fee would be \$3,500 or \$2,900 per single family residential unit, respectively, for 25 and 30 years. The respective multi-family and non-residential development fees would be \$9.72 and \$8.06 per gallon per day. In this scenario, the City takes on the risk associated with trying to recover all costs based on longer-ranged projections for development.

Alternative 3: Construct regional lift station and assess a service area fee based on a 15-year recovery. The Year 1 fee would be \$5,500 per single family residential unit and \$15.28 per gallon per day for multi-family and non-residential development. The City assumes less risk associated with predicting long-term projections for development, but the higher service area fees will likely discourage development interest.

### **Financial Impacts**

The City's preliminary estimate is that a regional lift station to serve the Southeast Service Area will cost approximately \$35 million. Staff recommends the establishment of the proposed Southeast Service Area and adoption of the attached ordinance establishing the service area fee schedule to be imposed on new development in the proposed service area to recover the capital outlay required for the construction of the regional lift station and associated infrastructure.

The proposed service area fee schedule is reflective of the cost to recover estimated design and construction expenses over a twenty year period assuming likely growth rates. The financial risk to the City is difficult to quantify as it depends on anticipated, but not necessarily planned,

development in the service area over the next twenty years. Service area fees will be increased in future years by 5% annually to cover the City's costs in financing the project.

**SDBE Summary**

This item was not reviewed by the EO/EA Department.

**Attachments**

Southeast Service Area - Figure 1

Ordinance to Adopt Assessment Fee for the Southeast Service Area